

## The Digital Aircraft

*Solutions for the aerospace industry*



# Changing business environment

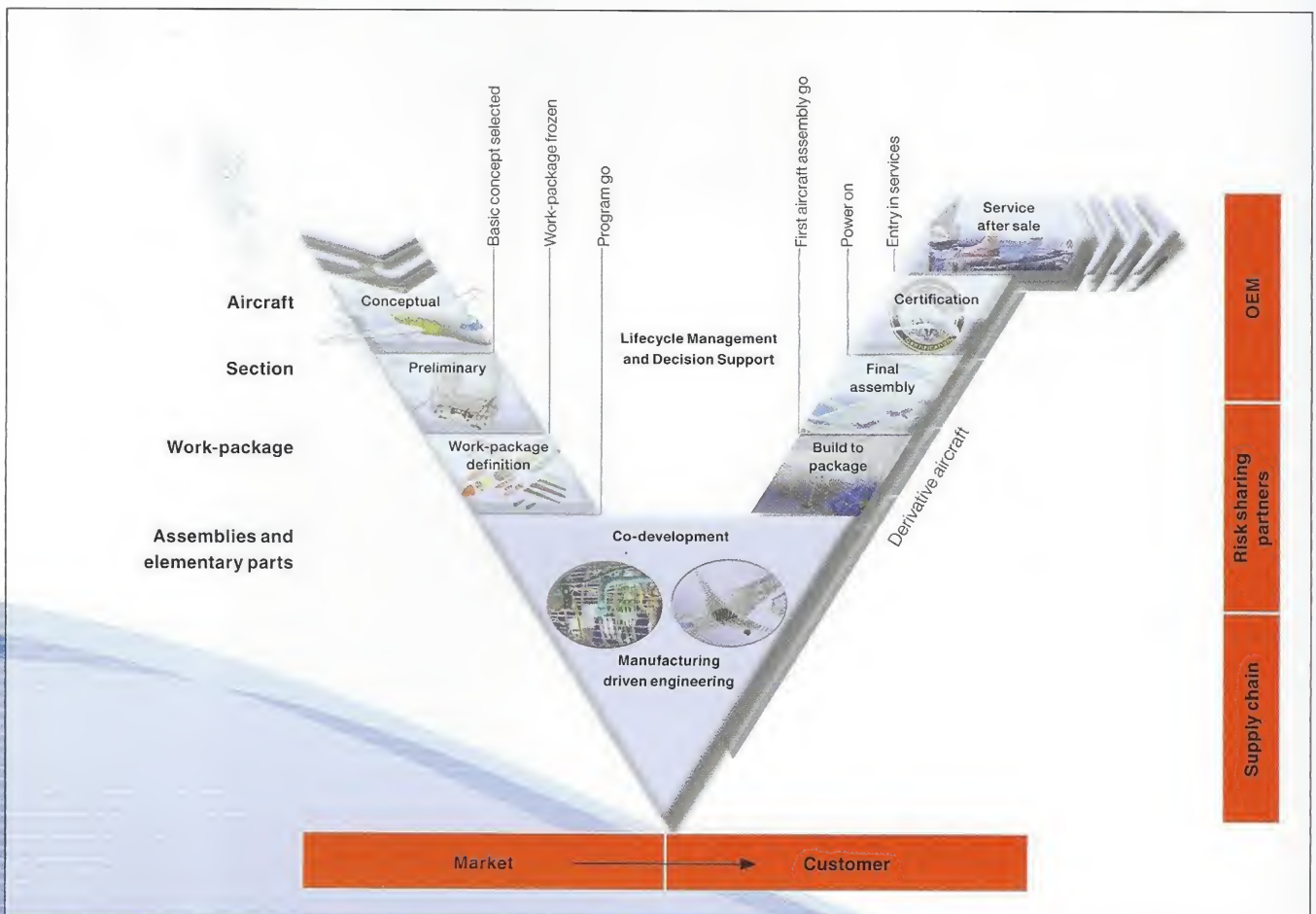
## Boeing Commercial Aircraft – Manufacturer and integrator – Program: 7E7

"We are entering the 21st century with new ways of doing business, Breakthrough business processes and systems technologies will enable us to achieve completely new, innovative ways of developing our products."

Scott Griffin, CIO,  
The Boeing Company.

The nature of the aerospace marketplace has changed substantially in recent years:

- The need to anticipate changes in the commercial environment and to have the agility to respond appropriately
- More competitive timescales and costs with ever more complex products
- The rise of risk-sharing programs
- The outsourcing of many design/build/support activities as OEMs increasingly position themselves as large scale systems integrators
- An increased focus on rationalising and improving the capability and efficiency of the supply chain.





## Challenges

In addressing performance improvement, the dilemma is clear. Established methods and process are sometimes seen as the safe option: resources can be planned, schedules established and capabilities assumed with an understood level of confidence. New partnering business models and a fiercely competitive global environment however means that yesterday's performance levels are simply not enough. Doing nothing is not an option.

The new business environment demands the ability to distribute and manage physical work-share, greater sharing of tasks and data, the resolution of breakages in process flows, the need to learn from through-life experience and the need to grow new skills.

Today's focus for aerospace program managers is the selection and deployment of performance improvement initiatives. The rewards are realised through:

- *Improved early communication between design, manufacturing and service engineering teams*
- *The ability to constantly monitor performance and cost implications of proposed changes between these teams*
- *The increase of design iterations while reducing costly late changes.*

### Airbus – Manufacturer and integrator – Program: A380

"Standardising on IBM's and Dassault Systèmes' PLM solutions will enable all our divisions to share a common engineering infrastructure for development, construction and production."

Dr. Andreas Groth, Senior Vice President,  
Information Management EADS.

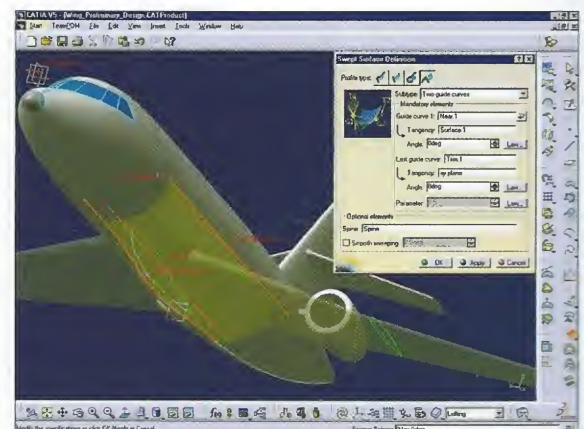
## Why I.T. must change

To meet these needs, information technology has had to change in three major areas:

- *To enhance employee and process innovation and productivity, maximising the impact of engineering tools and increased integration*
- *To apply control over the complete product set, related tasks, resources, relationships and, above all, cost*
- *To do so in a seamless collaborative environment, across organisational and geographical boundaries.*

The challenge is to capture the benefit, while minimising the risk of change: to realise innovation while making better use of existing resources.

Successful deployment accelerates the adoption of common methods and processes across the extended enterprise, facilitates collaboration and links innovation to development. Furthermore, it sustains continuous improvement to intellectual property, allowing capture, management and re-use on derivative programs.



# IBM response

## **The Digital Aircraft – the route to innovation and productivity**

IBM, in partnership with Dassault Systèmes, have led the market in the provision of engineering applications to the aerospace industry for many years. Our PLM applications have become the de-facto standard, the system of choice for OEM's, Partners and Suppliers and the core extended enterprise engineering suite for all major new Aircraft programs.

In a new joint initiative, drawing upon our experience of working closely with aerospace clients, we have developed a portfolio of Digital Aircraft Solutions which addresses the specific transformation needs of the industry.

The Digital Aircraft Solutions address the key processes and sub-processes in the design through manufacture of aircraft, across all phases of the program and all participants in the extended enterprise.

IBM PLM Industry Solutions developed in partnership with Dassault Systèmes are field-proven solutions that help manufacturers increase productivity, profitability, and return-on-investment. Developed in conjunction with industry-leading companies, they are based on IBM best practices and DS PLM Practices.

They exploit the power of CATIA V5 for product design and simulation, as well as ENOVIA and SMARTEAM for business process and lifecycle management. Using DELMIA products, the solutions can be extended to address build and support processes design and simulation.

- **Global deployment**

IBM has the structure and capability to deploy solutions globally to large, medium and small businesses. It is today working with manufacturers and suppliers not just to implement software, but to help transform organisations by focusing on common tools, processes and practices. IBM and its partners have experience of working with OEMs and suppliers to drive integration globally across the supply chain, whether an engine manufacturer in Europe, a design partner in Asia or a tooling supplier in South America, our Global PLM Team can make it happen.

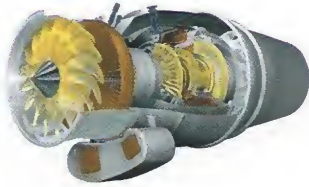
- **Readiness for partnership**

As a supplier to the industry we recognise the major impact on suppliers. An overall net decrease in supply chain participants creates both threat and opportunity. Our Digital Aircraft approach recognises the specific needs of partners and suppliers. Our PLM industry solutions focus on increasing the capability of the supplier's engineering enterprise, integrating existing workload and activity, and also on improving readiness for partnership on emerging aircraft programs with the OEMs. Getting into position early with the right tools and processes positions suppliers as high capability and low risk.

- **Transformation**

IBM Digital Aircraft Solutions developed in partnership with Dassault Systèmes can help you improve your innovation and operational efficiency, enabling you to grow profitably. With world-class business transformation consultants and real, proven solutions customised to your industry and company, we can help you future-proof your business.





**Pratt & Whitney Canada – Propulsion system supplier**

"Our goal is to become an industry leader in designing engines, using digital technology throughout the entire product lifecycle. IBM and Dassault Systèmes have an unique PLM vision and strategy. Their PLM solutions represent a key element in our Digital Enterprise vision. We plan to be together for a long time."

*Amal Girgis, CIO,  
Pratt & Whitney Canada*

**Liebherr – Supplier**

"In complex projects, combining information technology tools and industry best practices with aerospace process requirements calls for reliable, sustainable and proven partners. IBM, supported by Dassault Systèmes, meets this partnership qualification because it is a truly global player that ensures an internationally harmonised and controlled delivery of Business Consulting Services and PLM Solutions to European organisations."

*Andre Benhamou, Managing Director, Liebherr Aerospace Toulouse.*



**Datum Design – Tooling supplier**

"Designing in CATIA has enabled us to win business. Our company has doubled in size and our productivity has tripled using the modelling available in CATIA. Because of our knowledge of Version 5, we were able to become more involved in the decision making process of our customer. We also found that modelling, drafting and modifications were much quicker in Version 5, giving us significant productivity gains and a clear advantage over our competitors. CATIA has led to the doubling of our profit over the last two years."

*Michael Maguire, Joint Managing Director,  
Datum Design*



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